

## WHAT IS CLAIMED IS:

1. A method for protecting an avian host from TRT and/or TRT or SHS-related respiratory distress comprising administering a vaccine *in ovo* to a fertile egg containing an embryo of the avian host, said vaccine comprising an immunogenically-effective amount of a live, attenuated strain of turkey rhinotracheitis virus in the approximate range of from about  $10^{3.2}$  TCID<sub>50</sub> per egg to about  $10^{4.5}$  TCID<sub>50</sub> per egg, wherein said vaccine is administered on or before day 24 of incubation.
- 10 2. The method of Claim 1, wherein said immunogenically-effective amount is administered in a suitable vehicle of approximately 0.05 to 0.1 ml per egg.
- 15 3. The method of Claim 2, wherein the immunogenically-effective amount is about  $10^{3.2}$  TCID<sub>50</sub> per egg.
4. The method of Claim 2, wherein the immunogenically-effective amount is about  $10^{4.2}$  TCID<sub>50</sub> per egg.
- 20 5. The method of Claim 1, wherein said avian host is a turkey or chicken embryo.
6. The method of Claim 5, wherein said administration occurs on approximately day 18 of incubation (chicken) or approximately day 24 of incubation (turkey).
- 25 7. The method of Claim 3, wherein the avian host is either a turkey or a chicken embryo.

8. The method of Claim 7, wherein the avian host is a turkey embryo.
9. The method of Claim 7, wherein the avian host is a chicken  
5 embryo.
10. A process for protecting turkeys and chickens from exposure to virulent strains of turkey rhinotracheitis virus, comprising administering *in ovo* to fertile eggs a vaccine comprising, on a per egg basis, an immunogenically-effective amount of a live, avirulent strain of turkey rhinotracheitis virus, wherein said administration results in a decrease in the percentage of eggs that hatch of less than about 2%.
- 15 11. The process of Claim 10, wherein the immunogenically-effective amount is in the approximate range of from about  $10^{3.2}$  TCID<sub>50</sub> per egg to about  $10^{4.2}$  TCID<sub>50</sub> per egg.
- 20 12. An *in ovo* vaccine for protecting turkeys and/or chickens from exposure to virulent turkey rhinotracheitis virus, comprising a buffered solution containing, on a per egg basis, a live, attenuated strain of turkey rhinotracheitis virus in an immunogenically-effective amount of from about  $10^{3.2}$  TCID<sub>50</sub> to about  $10^{4.2}$  TCID<sub>50</sub>.
- 25 13. The vaccine of Claim 11, wherein the immunogenically-effective amount is efficacious against subsequent post-hatch exposure of the turkey and/or the chicken to virulent turkey rhinotracheitis virus; and produces substantially no decrease in the percentage of *in*

ovo vaccinated turkey and/or chicken eggs that hatch upon the expiration of the incubation period.

- 5        14.      The vaccine of Claim 13, wherein the immunogenically-effective amount is about  $10^{4.2}$  TCID<sub>50</sub>.
- 10        15.      A method for inoculating poultry against turkey rhinotracheitis disease which comprises administering an immunologically effective amount of a live, attenuated strain of TRT virus in a pharmaceutically acceptable carrier *in ovo* within the range of at least about  $10^{3.2}$  TCID<sub>50</sub> per egg to about  $10^{4.2}$  TCID<sub>50</sub> per egg.
- 15        16.      The method of Claim 15, which further comprises administering together with said TRT at least one other vaccine selected from the group consisting of Newcastle Disease vaccine, and infectious bursal disease vaccine.
- 20        17.      The method of Claim 16, further comprising administering at least one vaccine selected from the group consisting of infectious bronchitis vaccine and Marek's disease vaccine, wherein said vaccine is administered post-*in ovo*.
- 25        18.      The method of claim 17, wherein said post-*in ovo* vaccine is administered at approximately day 1 of age.
19.      The method of Claim 15, wherein said method results in substantially no decrease in the number of eggs that hatch.

- 5      20.     The method of Claim 15, wherein said method produces a  
decrease in the percentage of eggs that hatch of less than about  
5%.
- 5      21.     The method of Claim 21, wherein said method produces a  
decrease in the percentage of eggs that hatch of less than about  
1%.
- 10     22.    A method of providing elevated titers to TRTV, which comprises  
formulating an *in ovo* vaccine of attenuated TRTV antigen, and  
administering said vaccine so as to provide a TCID<sub>50</sub> in the range  
of about 10<sup>3.2</sup> to about 10<sup>4.5</sup> per egg within a vehicle of  
approximately 0.05 to 0.1 mL per egg.